

Abstract of the Disclosure

A method of forming a PE-TEOS layer of a semiconductor IC device provides uniformly thick PE-TEOS layers on a batch of wafers. First, a loading wafer cassette is prepared to provide the wafers to be processed. Next, a process atmosphere is pre-created in a processing chamber. Then the wafers are supplied in sequence into the chamber from the loading wafer cassette and the wafers are mounted on a heater table in the chamber. Next, the PE-TEOS layer is deposited on the wafers by spraying a process gas into the chamber through showerheads. Next, the wafers are discharged from the chamber. Once the chamber is cleared of wafers, the inside of the chamber is cleaned by supplying a cleaning gas into the chamber, and exciting the cleaning gas with RF power. Subsequently, more TEOS gas is supplied into the chamber through the showerheads without being excited by RF power to especially reduce the temperature of the showerheads and that prevailing inside the chamber. In particular, the temperature within the chamber is brought back down to the process temperature.